

ABSTRACT

An improved line driver and method for increasing the available signal transmit power on a transmission line are disclosed. The improved line driver achieves an available transmit power increase without increasing the maximum current in the line
5 driver output stage. The output stage of the line driver may comprise a first amplifier, a second amplifier, and an integrated back-matching resistor network. In order to further increase the available transmit power; a protective semiconductor device may be added to a line driver output stage for each semiconductor device in the first and second amplifiers.
10 A third embodiment of a line driver output stage in accordance with the present invention may comprise a combination of the integrated back-matching resistor network along with the protective semiconductor devices. In its broadest terms, the method for increasing the available signal transmit power on a transmission line of the present invention can be described as: applying a transmit signal to an input stage of an integrated line driver; amplifying the transmit signal such that the output signal swing exceeds the maximum
15 drain-source voltage of the integrated circuit technology used to implement the line driver amplifier(s); and applying the amplified transmit signal via an integrated back-matching resistor network to the transmission line.